

ABSTRACT

A MAC controller for a station in a wireless network, and a method for transmitting packets according to a wireless network MAC protocol. Executing a sub-sequence means transmitting a data unit and receiving or not one of the expected responses when a response is expected, so that a sub-sequence has a finite set of outcomes. One embodiment of the MAC controller includes a packet scheduler connected to an interface for providing packets for transmission.

The MAC controller also includes transmit hardware connected to a physical layer interface of the station to execute sub-sequences. The transmit hardware includes a buffer to receive from the scheduler and store a set of execution data. The transmit hardware also has a signal path to the scheduling engine to provide an indication to the packet scheduler of the outcome of a sub-sequence. The transmit hardware is connected to a receiver to indicate the reception at the wireless station of a data unit of received data unit types that include data unit types that may be a response of a transmission of a sub-sequence. The packet scheduler prepares and loads into the buffer the execution data set for executing the next sub-sequence of the tree, and, in response to an indication received from the transmit hardware of a particular outcome of the next sub-sequence, provides and loads into the buffer the execution data needed for executing one or more sub-sequences that are further along the tree than the completed next sub-sequence.